National Transportation Safety Board
Operations and Human Performance Groups Factual Report

March 28, 2005

Accident Information

Accident No.: DCA04MM015
Description: Capsize of Seaport Taxi *Lady D*.
Location: Baltimore Inner Harbor near Fort McHenry National Monument.
Date: March 6, 2004
Time: ~1600 hrs Eastern Standard Time

Group Representatives

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Party:
Living Classrooms Foundation
Director of National Historic Seaport
Mr. Andy Murray

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Tel:

Vessel Data

A. Accident Information **NTSB NO. DCA04MM015**

Date of Accident:	Saturday, March 6, 2004
Time of Accident (local)	4:00 PM
Location	Baltimore Harbor, Baltimore, MD
Type of Accident	Capsizing
Coastal/Ocean/Harbor/Pilotage	Harbor

B. General Information

Vessel Name	*Lady D*
Flag	US
Port of Registry	Baltimore
Owners	Living Classrooms Foundation
Operator	Seaport Taxi
Builder	Susquehannah Santee
Location built	PA
Year Built	1996
Classification Society	None
Official Number	MD8246BC

C. Vessel Particulars

Type of Vessel:	Welded Steel Double-Ended Ferry
Passenger Capacity	24
Passenger on board	23
Gross Tons	2
Net Tons	
Length Overall (LOA)	36 ft
Beam	8 ft
Design Draft	Pontoon Boat
Operating Speed	6 knots
Design Freeboard	Pontoon Boat
Main Engines	90 Horsepower, 4 stroke Honda Outboard

Horsepower	90 HP
Propulsion type	Outboard
Electrical Power	
Emergency Power	None
Fuel Type	Gasoline

D. Crew

Number Total	2
Master	1
Mate	1

Lady D after the accident-NTSB photo

SUMMARY

The Seaport Water Taxi, *Lady D*, or commonly referred to as the No.1 Boat by the operators, arrived at the Baltimore City Fire Department Dock at Fort Mc Henry National Monument and Historic Shrine at approximately 15:45. The *Lady D* was on a continuous back and forth schedule between Fort Mc Henry and Fells Point. The Captain notified the Fort Coordinator, who was an employee of Seaport Taxi, that he was approaching and to prepare the passengers. 23 Passengers were sent to the Fire Boat Dock and boarded the *Lady D*. Three of the passengers were children.

The *Lady D* is a pontoon boat with two fore-and-aft passenger benches. The operator console was forward on the starboard side. The vessel was loaded over the bow through a door into the enclosed cabin area, which had sliding windows on each side. The Mate normally stood to the port of the Master and slightly behind. Life preservers were stowed below the benches.

Shortly before boarding, passengers noted the darkening sky. The dock coordinator and passengers told investigators that as the boat left the Fort, a heavy rain began.

The boat departed the Fire Boat dock with a Master, a Mate, and 23 passengers, and headed for Fells Point. Shortly after its departure, Seaport Taxi's Senior Captain on

the Water, who was commanding another water taxi running between Harbor Place and Fells Point reported that a squall was in the harbor and that operators should find the nearest safe place to wait for the storm to pass. The Senior Captain on the Water then called the *Lady D* to see if it had left from the Fort and recommended two safe locations to attempt a landing. The Master responded that he had left Fort Mc Henry already, and diverting to a safe landing sounded like a good idea. The Seaport Taxi Office Manager heard the transmission and checked a Doppler weather presentation on her computer and reported to the fleet that the heaviest concentrations of precipitation was North and South of Downtown Baltimore and that areas of "blue and green" or moderate precipitation were over the harbor. The Senior Captain on the water arrived at Fells Point and called the *Lady D* again. The *Lady D* did not respond on the company marine radio VHF channel 71. The Senior Captain on the Water attempted to call the Master on the company UHF radio, which is commonly used in the marine industry. He also attempted to call the cell phones of the Master and Mate.

According to witness statements, the *Lady D* had backed away from the Fort. A heavy rain and windstorm began as the vessel departed from Fort McHenry. The intensity of the rain and wind was reportedly rapid and increasing. Some passengers reported that the vessel began to roll in the waves. The wind was initially reported to be off the port bow of the *Lady D*. The relative direction of the wind began to shift counterclockwise according to statements by passengers. The intensity of the rolling increased until the vessel heeled to starboard dramatically causing some passengers to

leave their seats and shift to the port side. The vessel's list to starboard decreased and the Mate asked passengers to return to their seats. Some passengers recall the Captain altering course to starboard. The captain stated to investigators, that "as I tried to get into that area, I couldn't even turn in that direction. And the wind seemed to be pushing me out and that is why I mentioned earlier that I was almost pushed out to be opposite the Bay Cafe area, and I said, gee, I will go into the BMC[1] on this eastern side of the BMC area."

Moments later, it was reported that the vessel dramatically heeled to starboard again, and continued over on to her starboard side, and capsized completely. The event was rapid and estimated to take only seconds. The crew did not have time to instruct passengers to put on life preservers and no one was able to put one on. The crew and some of the passengers were able to escape to the surface.

Personnel from the United States Naval Reserve Center-Baltimore, MD, at Fort McHenry witnessed the accident and called 911 and prepared a landing craft to start a water rescue. The Baltimore City Fire Department Boat was dispatched to the scene and was joined by a Baltimore City Marine Police vessel. The United States Coast Guard sent a helicopter and two craft to begin searching for survivors. Seaport Water Taxi sent a Senior Captain and the Senior Captain on the Water to the area to assist. Seaport Taxi accounted for all but three persons within an hour of the accident.

[1] Baltimore Marine Center

Three passengers were found later, one person died at the scene, one died within 72 hours and one suffered severe brain injury. Others were treated for minor injuries and released.[2]

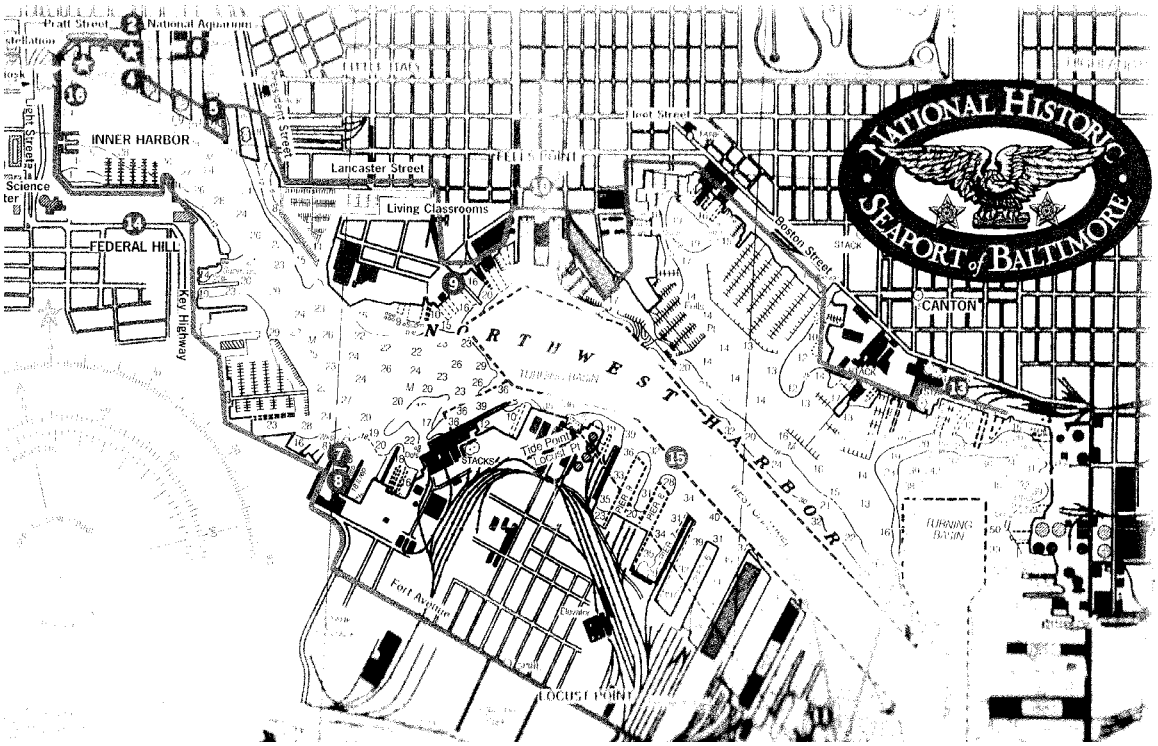
The *Lady D* was towed to the BCFD Fire Dock at Ft.McHenry. Witnesses remember the canopy in place under the water after the accident with broken windows. When the vessel was turned upright, the canopy and starboard passenger bench was missing.

ROUTE DESCRIPTION

The intended route of the Lady D is (0.9) miles long and would normally take approximately 10 minutes. The service speed of the Lady D was 6 knots. Fort McHenry is on the Eastern end of Locust Point and south of the Baltimore Marine Center, which is on the North side of the harbor[3]. There are several aids to navigation in the area to mark the channel. Channel marker #7 and "NH" mark the south and north entrances to Baltimore's Northwest Harbor, at the head of the Patapsco River. The water around the Fort dock is 12 to15 feet deep and the main channel is approximately 38 feet deep.[4]

[2] See Survival Factors Factual.
[3] Nautical Chart 12281
[4] Nautical Chart 12281, Baltimore Harbor Channel Depths

Seaport Taxi customers would purchase a one day fare and would travel on the Inner Loop between National Historic Seaport attractions and Fells Point. Passengers wishing to go to Fort McHenry, would board the Lady D. for the trip between Fells Point and Fort McHenry. The system did not have a time driven schedule. They run in a continuous loop and the frequency depends on whatever stops were involved. The other stops included Henderson's Wharf, Captain James, Harris Creek, Lighthouse Point, Tindeco Wharf, and the Canton Waterfront Park. These stops were made as requested by passengers or by phone.



Seaport Taxi Routes in Inner Harbor-Seaport Taxi

On March 6th, 2004, there was a flood tide with water levels one foot above Mean Lower Low water.[5] (Detailed weather conditions can be found in the Meteorology factual report) A rapidly moving weather system moved through the area in the afternoon, with high winds, rain and lightning activity. A National Weather Service "special marine warning" was issued at 1605 for that afternoon, just minutes after the Lady D capsized. But passengers reported seeing dark clouds before boarding the boat at Fort McHenry and it began raining heavily as the boat left the dock. The Captain indicated that the wind was increasing as he backed away from the Fort.

The *Lady D* has been going to Fort McHenry since NHS has owned Seaport Taxi. For 2 years prior to the accident, the run to Fort McHenry was the *Lady D*'s primary route. The Seaport Taxi operation is a loop, and the boats make the loop depending upon the passenger traffic and how many stops the boats have. Up to 80 percent of the passenger traffic begins at Harbor Place in Baltimore's Inner Harbor. Rotating the smaller boats in rapid succession provides better customer flow according to company officials.

The Lady D was using a dock at Fort McHenry, which belonged to the City of Baltimore after a hurricane destroyed their regular berth near the BCFD fireboat dock at Fort McHenry. Passengers would be shuttled about the harbor on different Seaport Taxis using one daily fare. Once at the Fort, a Fort Coordinator would keep a count of the

[5] NOAA/NOS PORTS© Historical Data Retrieval, 3/6/2004

number of passengers at the attraction. Towards the end of the day, the Fort Coordinator would make sure that the operators had collected all of their Seaport customers.

VESSEL DESCRIPTION

The Lady D. was a pontoon vessel. It was 32 feet in length, 8 feet wide and was rated at 2 gross tons. It could carry up to 24 passengers with one crewmember. On March 6th, the Lady D. was crewed by a captain and a mate. At the time of the accident, the boat was carrying 23 passengers, putting the boat at the maximum passenger count allowed by the Lady D's Certificate of Inspection issued by the United States Coast Guard.

Under United States Coast Guard regulations, the Lady D was considered a small passenger vessel. A small passenger vessel is less than 100 gross tons, carries more than 6 passengers, at least one for hire, but less than 150 passengers or 49 overnight guests. This vessel was inspected using Subchapter T of 46 C.F.R, and are commonly referred to as "T-Boats". The USCG required the vessel to have one USCG licensed Master aboard. The route descriptions, which previously mentioned Locust Point have been changed after the accident by the U.S.C.G. In the future, Lazaretto Point will be used in lieu of Locust Point. Locust Point can refer to a large land mass and a specific navigation aid. The U.S.C.G. stated as a fact that Seaport Taxi was operating the Lady D. within their

certificate at the time of the accident, and have made the change to Lazaretto Point on vessel COI's to clarify this judgment.

Seaport Taxi operated 10 vessels, which were certificated as follows:

Note: All vessels are aluminum hull. Means of propulsion is gas engine for eight boats; Diesel engine for MiGeNi; and gas outboard for Raven.

Vessel Name	COI Date	COI Expires	Crew Required	Total Persons	COI Route Permitted prior to the Lady D. accident
Patricia P	05/31/02 Amended 06/18/03	05/31/07	1 Master	25	Patapsco River between Fells Point, Canton Cove Marina and the Maryland Science Center, not more than 500 feet from shore…
Lady D	02/28/07	02/28/07	1 Master	25	Patapsco River from Tendeco Wharf to Locust Point to the Inner Harbor, not more than 1,000 feet from shore under reasonable operating conditions…
MiGeNi	05/26/00	05/26/05	1 Master 1 Deckhand	79	Patapsco River between Fort McHenry and Lazaretto Point to the head of Navigation, not more than 1,000 feet from shore.
Donovan's Reef	05/23/01	05/23/06	1 Master 1 Deckhand	67	Patapsco River between Fort McHenry and Lazaretto Point to the head of Navigation, not more than 1,000 feet from shore.
Lady B	02/27/02	02/27/07	1 Master 1 Deckhand	43	Patapsco River between Fort McHenry and Lazaretto Point to the head of Navigation, not more than 1,000 feet from shore.
W.B. Morgan	06/08/00	06/08/05	1 Master	25	Patapsco River between Fort McHenry and Lazaretto Point to the head of Navigation. Vessel is limited to voyages of 30 minutes or less….

Vessel Name	COI Date	COI Expires	Crew Required	Total Persons	COI Route Permitted prior to the Lady D. accident
Patrick Duffy	05/31/02	05/31/07	**1 Master** **1 Deckhand*** 0-24=0 deckhnd 25-49=1 deckhnd	52	Patapsco River between Fort McHenry and Lazaretto Point to the head of Navigation, not more than 1,000 feet from shore.
Phoenix	01/21/03	01/21/08	**1 Master** **1 Deckhand*** 0-24=0 deckhnd 25-71=1 deckhnd	73	Patapsco River between Fort McHenry and Lazaretto Point to the head of Navigation, not more than 1,000 feet from shore.
Eagle	02/28/02	02/28/07	**1 Master** **1 Deckhand*** 0-24=0 deckhnd 25-69=1 deckhnd	71	Patapsco River, Back River, Middle River, and Seneca Creek, not more than one mile from land. Hawk Cove not to extend past a line from Brier Point to the north end of Hart-Miller Island.
Raven	11/14/02	11/14/07	**1 Master** **1 Deckhand*** 0-49=0 deckhnd 50-98=1 deckhnd	100	Patapsco River between Fort McHenry and Lazaretto Point to the head of Navigation, not more than 1,000 feet from shore.

The boat was powered by one 90 horsepower Honda outboard motor. The vessel had an enclosed canopy housing the passenger and operating console. The Lady D had a

forward and after door with loading steps on the bow. The captain would dock the boat,

The Lady D after the accident, upright, showing the forward loading ladder-NTSB photo

Bow-in, and passengers would enter the vessel and sit on two benches. The benches were along the port and starboard sides of the enclosed cabin and passengers would be seated facing each other. Adult and child life preservers were normally stored beneath the benches. The Captain had a separate chair forward on the starboard side of the boat. The Mate stood further behind the Captain and in the middle, or amidships.

The boat was equipped with a VHF radio tuned to the Seaport Taxi "house" channel 71 and a UHF radio. The boat did not monitor VHF radio weather stations,

however the Mate carried a personal radio capable of receiving a weather broadcast. He reportedly did not hear any weather warnings. In addition, the Mate carried a portable wind gauge. Before departing the fort, the Mate noted a reading of 13 knots. While attempting to gather weather information, the Mate noted that there were no gusts, "but, it was dark clouds, you could see, so I knew there was something going to happen somewhere." The crew often carried personal cellular telephones to communicate with the main office.

A typical box of equipment on Seaport Taxi boats-NTSB photo

The Seaport Taxis also carry boxes with various supplies, equipment, and administrative papers. Emergency placards are mounted to describe emergency procedures and the donning of life preservers.

DAMAGE TO THE VESSEL

After the accident, the canopy and the starboard passenger bench were missing. The boat had two fuel tanks mounted outside of the cabin, just forward of the motor mount. The boat maintained flotation, but was declared a total loss.

Lady D, after the accident-NTSB photo

COMPANY ORGANIZATION

Organizationally, Seaport Taxi is ultimately under the auspices of the Living Classrooms Foundation (Living Classrooms), a nonprofit organization headquartered on the east side of Baltimore's Inner Harbor. The primary mission of Living Classrooms is to provide experienced-based training to diverse student groups, with emphasis on serving at-risk youth. When Living Classrooms was established in 1985, its first program involved 100 children rebuilding the schooner *Lady Maryland*. Today, over 50,000 students participate annually in the 38 education and out-reach programs sponsored by Living Classrooms in Baltimore, Washington, DC, Philadelphia, Pennsylvania, parts of New Jersey, southern Maryland, and northern Virginia.

Living Classrooms Office, Baltimore, MD-NTSB photo

Living Classrooms emphasizes hands-on training and workforce development. The organization has customized job-training programs for adults that cleanup, restore, and rebuild distressed neighborhoods. In 2002, they began operating the Crossroads School, a public middle school that emphasizes hands-on learning. The foundation is now a multi-campus organization operating more than 35 educational programs on Baltimore's waterfront and throughout the city. According to a foundation spokesperson, over 50,000 students annually participate in the programs sponsored by Living Classrooms.

The Living Classrooms Board of Directors has 50 business leaders and politicians from the Baltimore area. An executive committee of Board members, act as liaisons between the Foundation's full-time personnel and the full Board. Living Classrooms is a 501(c)(3) nonprofit organization established in 1985 in Baltimore. Today its operations are centered in Baltimore and Washington, DC; however, the foundation serves students to the north in Philadelphia and parts of New Jersey and to the south in counties of southern Maryland and northern Virginia. To link the maritime history attractions around the Inner Harbor area, Living Classrooms Foundation created the National Historic Seaport of Baltimore, a partnership with the City and the State. According to the NHS director, NHS represents about 50 percent of the Foundation's assets.

NHS is a partnership that was formed in 1999 to unite many of the maritime historic assets in and around Baltimore's Inner Harbor. Nine entities now comprise the partnership. (See figure X.) Of the nine, NHS owns Seaport Taxi, the Baltimore Maritime Museum, and the USS *Constellation* Museum. The remaining partners are affiliates to which Seaport Taxi provides shuttle service.

NHS Assets	NHS Affiliates
Baltimore Marine Museum and its historical vessels and structures as follows: US Coast Guard Cutter *Taney,* Lightship LV#116 *Chesapeake,* US Submarine *Torsk,* Seven Foot Knoll Lighthouse	Baltimore Museum of Industry
	Top of the World
	Fort McHenry National Monument and Historic Shrine (National Park Service)*

USS *Constellation* Museum	Star-Spangled Banner Flag House
Seaport Taxi	Civil War Museum (Maryland Historical Society)
	Sail Baltimore/Visiting Ships Program
*NHS manages the Patriots of Fort McHenry, a friends group that helps the fort with educational activities and that funds miscellaneous activities such as fireworks displays not paid for by the Federal government.	

Figure X. National Historic Seaport of Baltimore Assets and Affiliates

According to a company spokesman, the Living Classrooms Foundation needed a way to travel between all of the National Historic Seaport sites and so it purchased Seaport Taxi from the company's owner in 2000. Seaport Taxi is owned by the National Historic Seaport of Baltimore or (NHS).

Seaport Taxi was purchased in March 2000 to unify all of the historic sites that are spread around the harbor. There used to be a service that ran from Harbor Place to Fort McHenry, but that group went out of business about the time that NHS was formed. The City owns the dock at Fort McHenry where Seaport Taxi lands. They lease the dock for $1/year. As part of the lease agreement, Seaport Taxi must maintain the dock. However, when the Fort McHenry pier was damaged by a hurricane, NHS obtained permission from the Fire Chief to land at the fireboat base. Living Classrooms has a renewable agreement of access with Fort McHenry, allowing people to enter the fort's gate. The fee is $100/year. In 2003, Seaport Taxi transported 200,000 paying customers. (A round way trip counts as two trips.) There is another water taxi operator in Baltimore.

USS Constellation, Baltimore Harbor-NTSB photo

The NHS Director stated that Seaport Taxi fit into the mission of training kids during the summer. The Taxi system transports students to classes taking place at other Living Classroom Foundation sites. When NHS purchased the water taxi in March 2000, Baltimore City and the taxi company had already negotiated a 5-year wharfage agreement identifying areas where the water taxis could land. At the time of this accident, the landing rights cost NHS $6,000/month, and the agreement was due to expire at the end of March 2004. According to the NHS director, Baltimore City's Department of Public

Works officials had indicated the wharfage agreement with Seaport Taxi would be extended for 1 year.

Typical Seaport Taxi Inner Harbor stop-NTSB photo

Wharfage Agreement Requirements:

- Must run certain hours, depending on the season,
- Must run year-round unless the weather is really bad (ice or snow),
- How many boats are in operation is left to the discretion of the company, so Seaport Taxi can scale back the number of boats in operation during the winter
- Must maintain insurance, and

- Must keep the boats in good working order.
- Charters for children (three programs):

The Baltimore County School System has an active program called "Renaissance" that lasts 5 or 6 weeks. The State has two smaller cooperative programs: SuperKids, lasting 2 weeks, and Bay Buddies, which is for severely handicapped, wheelchair-bound children. All of the Seaport Taxi vessels are front loading and, therefore, ADA accessible. The program manager on the education side of the foundation works with Seaport Taxi to line up charters for school children.

The Seaport Taxi operations are run out of a small building near the waterfront of in the Eastern Inner Harbor, near the Living Classrooms facility. The Director, Fleet Captain and office manager's desk and computer are located in an area near a small boat ramp and marina docks. The National Historic Seaport of Baltimore has offices at the old lighthouse in the Inner Harbor.

Seaport Taxi Office, Baltimore, MD-NTSB photo

The number of boats that Seaport Taxi runs during the winter and during the summer is "flexible," based on weather. In March of 2004, Seaport Taxi had six boats that were operational and 11 boats overall. Each was enclosed for passenger comfort. A company official said, "We would just operate the vessels where it would provide a decent service level and make fiscal sense." The Lady D was in standby mode and in service on weekends for the winter on days it would make sense.

MANAGEMENT STRUCTURE

The Living Classrooms foundation has a Board of Directors and an Executive Board. The CEO of Living Classrooms reports to the Board of Directors and has a staff to administer the various operations. The CEO of Living Classrooms Foundation is a native of Baltimore who graduated from the University of North Carolina in 1982. After working a miscellany of jobs, including a variety of training and coaching positions, around the world, he joined the Living Classrooms Foundation in 1986. He was promoted to Executive Director in 1989 and then became CEO in 1995. In this capacity, he supervises the Director of the National Historic Seaport of Baltimore.

The NHS director graduated from the University of North Carolina, Chapel Hill, with a degree in business. After graduation, he worked for Chemical Bank in New York City for 5 years. He then started an overseas joint venture. After 10 years, he returned to the United States in 1991 and joined a subsidiary of KPMG, eventually working his way up to managing director partner and chief operating officer of the $100 million company. He told Safety Board investigators that he tired of the travel required of his job so, he joined the Learning Classrooms family as the Director, National Historic Seaport of Baltimore. He indicated that he did not have any prior marine operations or safety

background. He said that Living Classrooms hired him for his strategic planning and financial management skills, with the intent of hiring other people to manage the day-to-day operations.

As NHS director, he oversees seven operating entities: Seaport Taxi, Baltimore Maritime, the U.S.S. *Constellation*, Paddle Boats, Patriots of Fort McHenry, the Baltimore Waterfront Promenade, and National Historic Seaport Administration, the administrative unit, which captures overhead and staff costs. The NHS director receives operational updates and supervises the Director of Seaport Taxi.

The Seaport Taxi director indicated to Safety Board investigators that he had been interested in boats and motors since he was child. He said that when he was about 10 years old, he learned about outboard motors reading the service manuals. He subsequently took Peterbilt Motors Company and General Motors Corporation training classes that dealt with vessel machinery. After graduating from Hofstra University with a major in fine arts and minor in business management, he worked for the R.J. Reynolds Tobacco Company for almost 15 years, chiefly as a sales representative. In 1986, while with R.J. Reynolds, he qualified for his first Coast Guard master's license, which authorized him to operate 25-ton passenger vessels. He then worked part time operating six-passenger charter boats in New York as a means of additional income.

During his last 2 years with R.J. Reynolds, he served as the training development manager in the company's Baltimore office. He next worked for a truck dealership and then an automobile dealership as a service manager. Concurrently, he "occasionally" operated boats for Harbor Shuttle, filling in primarily during the summer. By this time, his license had been upgraded to 100-ton vessels, master of inland and coastal waterways. He said that, in 1993 and 1994, he bought two vessels and then worked as an owner/operator for Harbor Shuttle until mid-1995. He then sold the vessels and operated occasionally as a captain for the water shuttle service.

After leaving his full-time job at the automotive dealership in 1998, he joined Local 37 of the International Union of Operating Engineers (IUOE) and had several assignments, including tug captain for the company in charge of the Popular Island reconstruction project. After that project ended, he worked briefly as a tools salesman before joining Local 25, the marine division of the IUOE. He worked a variety of job assignments, from deckhand to tug operator, on dredging projects in several waterways.

In 2001, after the Living Classrooms Foundation bought and renamed the water shuttle service Seaport Taxi, he joined NHS full time as the Seaport Taxi fleet captain. After 2 months, he was promoted to Director of Seaport Taxi, the position he held at the time of the accident. As director, he said that he oversaw the taxi operation in its entirety from fiscal issues, marketing issues, operations and maintenance, delegating maintenance

as required, scheduling, hiring, and overseeing performance. He has 2 permanent employees (the fleet captain and the office manager) and the vessel crews, which numbered 5 or 6 full-time and 5 or 6 part-time employees during the off-season. The captain of the Lady D was a seasonal employee who worked on weekends. Seaport Taxi had more than 60 employees in the peak season. The fleet captain reports to the Director of Seaport Taxi.

The fleet captain joined Seaport Taxi as a permanent employee in June or July 2001. When his predecessor was promoted to Seaport Taxi director, he became Fleet Captain. The fleet captain told Safety Board investigators that he was involved in social work before entering the marine industry. He indicated that he had worked for the City of Cambridge, Massachusetts, for 11 years in delinquency prevention and control. He next worked for Harvard Community Health Plan, a large health maintenance organization (HMO) in the New England area, as Director of Facilities and Facilities Manager for about 10 years. During that period, he earned a Bachelor's degree in business administrative, a Master's degree in urban affairs, and Advanced Graduate Certificates in adult education and training.

He said that he elected to take early retirement from the HMO and, in 1989, purchased a 40-foot CSY (Caribbean Sailing Yacht). He outfitted the yacht as a charter boat and obtained his first Coast Guard license. He then operated as a crew charter boat within the Boy Scouts of America fleet and Key Sail Charters. He next joined the ABC Charter

Fleet, headquartered in New Port Richey, Florida, and operated boats in the Gulf of Mexico and the Florida Keys. After ABC, he joined Show Queen Cruises, based in Clearwater, Florida, and operated a dinner cruise riverboat in the coastal waterways, tour boats, and 12-16-passenger sailboats in the Gulf. He said that he next worked 2 1/2 years as fleet captain for the Sea Coast Charter Company. During this time, he also served as second captain on a gambling boat and operating engineer underway on a Panamanian flight vessel.

The fleet captain operates a boat at least once a week and sometime as many as three days. He stated that it is built into the process. "I want to be out there. I want to see what they're doing. I want to see what's going on. I want to see how the boats are being handled. I want to see what the traffic's like. I want to feel what the boat's doing and quite often, I'll flip flop on the boats. The boat I prefer to drive is the No. 8 boat, but more often than not, I'll give that to somebody else and take a boat.

Crew Information

Regulatory Requirements

In certifying a small passenger vessels for commercial operation, the Coast Guard determines the number of crewmembers needed and their required competencies by considering, among other things, the size of the vessel, its route, the type and horsepower of the vessel's propulsion machinery, the number of passengers the vessel will carry, the

type and location of lifesaving equipment installed on the vessel, and the hazards peculiar to the route and service. In the case of the *Lady D*, its Certificate of Inspection (COI) issued by the Coast Guard required one licensed crewmember: the master. According to Seaport Taxi officials, they usually assign two crewmembers to each vessel, a licensed master and an unlicensed mate. On the day of the accident, the *Lady D* had two licensed masters on board, one serving as captain and the second serving as mate.

Master

The master, age 74, had served as an officer in computer systems for the U.S. Army from October 1946 to May 1974. After retiring from the Army, he consulted as a systems engineer with companies involved with U.S. Government agencies between 1974 and 1995. He moved to a waterfront community in Eastern Baltimore County, where, in 1995, he took up boating. In 1996, he bought diesel powered 46-foot Bayliner. In July 2001, he purchased a gasoline powered 34-foot Searay. Concurrently, he took several courses in maritime education, including a 48-hour United States Coast Guard Auxiliary covering various phases of boating, several Virginia Maritime Institute courses, a course on twin-engine boat handling conducted by the Power Boat Division of the Annapolis Sailing School, and courses at the Baltimore Community College. In his Coast Guard application file, the service time requirement was fulfilled, by certifying time as an owner operator.

On April 30, 2002, the Coast Guard issued the captain a U.S. Merchant Marine Officer license authorizing him to serve "for the term of 5 years" as a master of steam or

motor, vessels of not more than 50 gross registered tons (domestic tonnage) upon inland waters. The license also authorized him to engage in commercial assistance towing. In July 2002, he applied to Seaport Taxi to work as a part-time captain. He was assigned to the *Lady D* and had operated that vessel, generally on the weekends, since he was hired. Seaport Taxi limited the captain to single-screw vessels because he demonstrated proficiency operating the Lady D and because they did not want to incur the expense of taking a larger boat out of service to qualify him on twin-screw vessels.

Medical. The master told Safety Board investigators that he took no prescription drugs. He said, however, that he had completed taking a routine of antibiotics about 10 to 12 days before the day of the accident. He indicated that he had worn a hearing aid to discriminate sounds for about 3 years. Medical records indicate his eyesight was 20/38, corrected to 20/20.

Work/Rest History. According to the master, he normally wakes each day at 6 a.m. and goes to bed at 10:30 p.m. As noted earlier, he typically worked weekends. He indicated that he did not change his routine before the accident. He said that he went to bed on Thursday and Friday, March 4 and 5, about 10:15 pm. On Saturday, March 6, the day of the accident, he awoke at 6:45 and reported to work at 0930, a half hour before his shift was scheduled to begin.

Mate

General. The mate, age 55, told investigators that he had grown up around boats and had friends who were captains. On November 4, 1997, he completed a United States Power Squadrons (USPS) boating course conducted by Merrimac River.

The Mate was hired by Seaport Taxi In May 2003. He was a "seasonal/contractual hire" employee working 15 hours per week. Between August and November 2003, Seaport Taxi allowed him to learn boat-handling skills while he studied for his master's license. The company form, "Authorization to Operate Seaport Taxi vessels while in training for Captains License," required the master of the respective vessel to supervise the mate and be responsible for his actions. The mate was not allowed to operate the vessel with passengers on board until the master considered him competent to do so.

When the mate indicated that he wanted to try for his master's license, the Seaport Taxi director forwarded a "Sea Time Letter" to the Coast Guard regional examination center in Baltimore advising the license evaluator that, between May and October 2003, the mate had worked in the capacity of captain a total of 52 underway days on board various Seaport Taxi vessels. The director provided the names, registration numbers, sizes, tonnage, and method of propulsion of five vessels. The list does not include the *Lady D*.

On November 20, 2003, the Coast Guard issued the mate a U.S. Merchant Marine Officer license authorizing him to serve "for the term of 5 years" as a master of steam, motor, or auxiliary sail vessels of not more than 50 gross registered tons (domestic tonnage) upon inland waters. He was also authorized to engage in commercial assistance towing. The license carried a vision waiver: "Corrective lenses to be worn with spare glasses carried on board."

Medical. The mate told Safety Board investigators that he took cymatadine (Zantac type) for acid reflux.

Work/Rest History. The mate said that he awakened at 0730 on Thursday, March 4, worked doing maintenance from 0930 to 1730, and was asleep by 2400. The following day, he did not work and was at home attending to his own boat. The night before the accident, he was asleep by 2300. On Saturday, he awakened at 0730, at work by 0915.

COMPANY PROCEDURES

Operating Policies

The Seaport Taxi director indicated that, with the exception of a "very old policy book" that is "really not useable," the company does not have written policy or instruction manuals laying out detailed operating procedures He said that the company prefers providing one-on-one training and guidance summarizing company policies. There were no formalized written company procedures in place prior to the accident except that boats were not to operate when lightning was observed.

Weather Conditions. The Seaport Taxi director stated that he provides potential new-hire masters with instructions and company policies related to operating in general and windy weather conditions during the boat-handling exercise. He said that Seaport Taxi conducts the captain's prescreening only when a breeze is blowing and that he advises the applicant that windage[6] on the pontoon vessels is significantly greater than a conventional hull vessel. He added that the captains "learn quickly" that they are not going to be able to land a vessel if they do not understand that the pontoon boats have a high degree of profile in the wind. According to the Seaport Taxi director, the company's standing instruction for operating in weather is that if the captains encounter any kind of electrical storm, restricted visibility, fog, or condition that in their experience as a licensed masters dictates finding safe harbor, they should do so. Potential new hires are verbally instructed not to wait until they are told to get off the water according to the company director. The Seaport Taxi director said that he considers it a part of "good seamanship and common sense" not to operate in conditions in which you are not comfortable.

Seaport Taxi advises their operator about pending weather conditions and defers to the judgment of the captains, but will on occasion instruct their operators to "go to the bulkheads", or tie up the boats. The fleet captain checks the weather every morning before coming in, something that he has done for years. If there is an indication that there's

[6] Windage is commonly referred to as the sail area, or the surface area of a vessel that the wind can exert force upon.

something that could be coming through that day or any indication in the radar patterns that there's a potential, he alerts the office supervising manager to keep an eye on the weather.

In addition, the office manager has a computer alert or "Weather Bug", which has weather alerts, which flash constantly. If an operator had a question, they could contact the office manager and the weather program gives a radar picture and interpreted information.

The Seaport Taxi Office Manager Desk, which had the "Weatherbug" program installed-NTSB photo

A Seaport Taxi official said "That gives us plenty of advance warning and I can give specific directions to specific boats…It gives you a little more lead time to create an operation scenario. But, in the spring and in the summer, it's more often than not put them to the bulkheads now. Tie them down. We just get lightning all of a sudden and we won't operate in lightning in the area, and it'll be just that fast. Wherever you are now, put it to a bulkhead and tie it down." The captains are expected to "explain to your passengers as soon as the lightning passes, the wind passes, the storm -- whatever particular set of circumstances it is--tell your passengers we'll be resuming service and we'll be resuming service to the full extent of our hours tonight." The Seaport Taxi director summed up his weather policy,

"We also have our standing instruction, which is in any kind of electrical storm, restricted visibility, fog, any conditions that in your experience as a licensed captain dictates to you that you need to find safe harbor, you're going to be told that is our policy. It's not a wait until you're told to get off the water. If you're in a position where you're not comfortable being where you are, don't be there and this is a part of good seamanship and common sense and again, every situation can vary and be different. So, I leave that up to [them]. If a captain says I'm not going to take this boat here because I don't feel comfortable. The waves are too high or it's raining so bad I can't see or whatever the reason is, I respect their call. It's their judgment. It's their license and I would expect the courtesy when I'm running the boat and that's the same courtesy I give them."

COMPANY TRAINING

The Director, Natural Historic Seaport of Baltimore, stated, "Part of our mission is to hire at risk kids and you know, give them their first job, so that creates a fair amount of challenges that we deal with each summer. But, this crew was not part of that. This was an experienced crew.

Recruitment of captains and mates was primarily by word of mouth throughout a tight net network of mariners. Some employees returned regularly and others were seasonal. Occasionally Seaport Taxi had to advertise for captains. The fleet captain would see every mate and captain once per week. He would question them about something that was found on one of their reports or about something that he found under the boat. Changes in policy about tickets or asking to fill in for somebody would be frequent topics of conversation.

When asked about the captain of the Lady D, the fleet captain told Safety Board investigators that he's "a competent captain at the level he's at. He would like to expand to large boats. I've gone out with [him] on larger boats. We've done some test runs on the larger boats. I don't think he's ready for the larger boats and I don't think it's an appropriate placement for him. He handles a small boat well. He's a good captain. He's a reliable. He's great with customers, but I don't see him going up to the biggest boats in the fleet, which is what he would like to do. I've had conversations with him to that effect and he's

comfortable with the concept that he's doing a good job where he is and why put himself in harms way to go to a boat that's twice as big as what he's currently operating."

On May 4, 2003, Seaport Taxi used the *Lady D* to conduct man-overboard drills for three or four crews.

According to the Director of Seaport Taxi, the company's crew training program consists of two aspects: a full-day orientation in the Spring or a training session for a mate who could not attend the orientation. The orientation day consists of an overview of the operation, the attractions around the Inner Harbor, and basic knot tying skills. The employees are told what is expected of them and procedures are reviewed. A film is shown that describes Living Classrooms in relation to all the other Inner Harbor and Seaport operations. The fleet captain goes over the various duties and evaluations that he performs. The mates and captains are given a guide packet indicating their responsibility as a whole. The areas that are covered include:

- Seamanship
- Mate responsibilities
- Man overboard drills.
- Assisting overboard victims.
- Fire control skills
- Assisting passengers to safety as directed

- Anchoring
- Knots
- Radio operation
- Boat handling
- Line storage on decks
- Tripping hazards
- Passenger safety
- Child lifejackets and lifejacket location.
- Lookout Duties
- Customer relations.
- Administration

According to Seaport Taxi a person applying as a captain must present his master's license, which indicates that they passed the Coast Guard's screening and are considered qualified to hold that license. The Seaport Taxi director stated "We expect a certain level of competence by holding the certificate. We talk to them about what kind of experience they have and get a feel for where their head is. We explain to them what the job consists of and then we evaluate the individual's skill level by taking them out on a vessel having no passengers. So, with that in mind, I evaluate each individual's skills level. I'll go out with them. I'll show them how we maneuver the boats, how we handle them. Let them get familiar with it in open waters. get -- get the handle in, and get a feel for it and then

we'll do practice docking and maneuvering and typically I take them over to Fells Point Basin and I push against the Broadway Pier side. It's frankly not as forgiving as where we land. I want to see how cognizant they are of submerged objects, things of that nature." Seaport Taxi starts new captains on small boats. The new captain is then teamed with an experienced mate who knows the routing. The Seaport Taxi Director and fleet captain said they continually ride and evaluate their new captains. According to the Seaport Taxi director, most of the accidents they experienced were people slipping and falling on the boat. The crews have been made aware of these risks and that has reduced the number of those types of incidents.

Personnel Policies

The Living Classrooms foundation had several workplace policies in place. They defined their Equal Opportunity and harassment guidelines as well as a grievance procedure. Employees have a 90-day probationary period after they are hired. Employees are evaluated at least once per year.

As a condition of employment, LCF prohibits the unlawful manufacture, distribution, possession, or use of a controlled substance in the workplace for all personnel, including full-time, part-time, contract/seasonal, and temporary employees, and individuals contracted through a temporary agency. Reporting to work under the influence of drugs or alcohol, conviction under a criminal drug statute, and refusal to take a drug or alcohol test are among the acts that constitute grounds for dismissal.

All applicants for positions as vessel crewmembers are tested for drugs as a contingency to employment offers. Employees must submit to a breath test, blood test, or urinalysis test at the discretion of the Foundation. No applicant who tests positive will be hired. Such applicants can reapply for employment after 6 months but only after providing proof they have completed a recognized drug/alcohol rehabilitation program. Employees may be required to submit to a drug or alcohol test to determine whether an employee is under the influence of alcohol or drugs or has used alcohol or drugs on the Foundation's property. Employees are required to submit to testing following an accident involving a Foundation boat when alcohol or drugs may have played a part in the accident. Their policy refers to the Federal law at 46 CFR 16.230 requiring all individuals working as crew or educators on the Foundation vessels be enrolled in the USCG Random Drug Testing Program. When the decision to test is made, the employee is required to sign a *Consent and Release* form authorizing the lab to perform the tests and release the results to the Foundation. An employee who refuses to sign the form is subject to termination. Employees who test positive are terminated immediately. Living Classroom employees must adhere to a code of conduct, which requires suspension and or termination for:

- Theft of money, supplies, or property of the Foundation or fellow employees.
- Unsatisfactory work performance.
- Insubordination and/or failure to carry out instructions.
- Missing scheduled work hours with permission of your supervisor.

- Excessive absenteeism or tardiness.
- Having possession of or being under the influence of drugs prohibited by law while on the Foundation's premises.
- Destruction of Foundation property, threatened or actual violence, or carrying a weapon.
- Falsification of Foundation records.
- Violation of safety, fire prevention, health, or security rules.

Maintenance Program

According to the company director, Seaport Taxi does not have a formal preventive maintenance program requiring personnel to do prescheduled daily, weekly, monthly, and/or annual checks and upkeep of the fleet's vessels and their components. He stated that the pontoon vessels themselves are "very simple;" and the operating equipment includes a self-lubricating hydraulic navigation system and either a two-cylinder or a four-cylinder engine. Most routine maintenance, therefore, is limited to checking for leaks, replacing seals, adding oil, greasing engine parts, and changing spark plugs, tasks that are affected, in large part, by the number of hours that a vessel is in use[7].

The Seaport Taxi director said that the demands of the taxi service operation had demonstrated that maintenance needed to be "an ongoing process." He said that while the vessels are in use, their captains are shifting gears anywhere from 500 to 800 times a day

[7] Maintenance program covered in Engineering Factual

while landing and debarking, meaning the equipment is constantly cycling. The director indicated that Seaport Taxi had developed what he termed a "proactive" vessel maintenance program for the company's fleet. He said the captains are required to check all systems, lights, horns, and steering each time they are assigned to a vessel and to make sure everything is operating properly and to their satisfaction before they put the boat in service. The director stated that as licensed masters, he believed the captains "should have a good handle on what is right and proper for leaving the dock."

In addition, the company has adopted a written "feedback system." The masters are required to maintain a Captain's Shift Log on which they provide information for such line items as the time of day they began operating a particular vessel, how long they were on duty, and how much gas or engine oil they added during their shift. The log form also provides space where the masters can write comments about conditions or problems that they encounter during their shift such as vessel equipment that is damaged, missing, and/or not operating efficiently. At the end of their shifts, the masters submit the logs to the Seaport Taxi office. The office manager then reads the shift logs and provides a copy of any report of damage or of malfunctioning equipment to the fleet captain for review and/or action.

Both the fleet captain and the Seaport Taxi director said that they periodically inspect each vessel and its components, in particular, the engine, engine parts, and boarding ladders. According to the fleet captain, each morning, before the masters report for work, he goes to see that the engines do not show any indication of a problem. He also

checks the ladders and examines the vessels to see whether the previous crews left the boats clean. After performing a visual check of each vessel, the fleet captain goes to the Seaport Taxi office and reads copies of the previous day's shift logs to see whether a master has reported a problem with the boat. The fleet captain said that he frequently operates a boat to oversee how the crews are handling their vessels and to check what the traffic is like. If a master has reported that a particular boat is not operating efficiently or correctly, the fleet captain said that he will take out that boat to determine whether he can identify and, if possible, correct the problem. If they do not have the capability to fix the problem, they contract with local marine repair facilities to perform the work.

On the days that the fleet captain does not work, the Seaport Taxi office manager provides the director with a copy of any captain's shift log indicating a problem with a vessel, and the director will look at the boat. Otherwise, the Seaport Taxi director does not have "a written schedule" for examining the vessels in his fleet. He said that during Seaport Taxi's slow season, which is winter, he spends more time on marketing and planning for the upcoming summer season. As activities accelerate, and "the boats are cycled and used more often," he shifts his focus from the office to waterway operations and examines and rides the boats more often.

The Seaport Taxi director and the fleet captain both indicated that they were last aboard the *Lady D* on March 2. The fleet captain was working with the crewman who would subsequently serve as the mate on the *Lady D* on the day of the accident. The fleet captain

was overseeing preparations for the vessel's annual topside inspection by the Coast Guard, and the mate was counting and checking the condition of the preservers, testing the water lights, and going through the boat making sure everything was the way it should be. The director indicated that the last time he operated the *Lady D* was February 25, when he took it to attend a meeting at the *Constellation*. He said, "As far as the operational systems, [the vessel] seemed fine. Radio was working." The fleet captain said that he operated the *Lady D* less than a week before the accident and noted no problems.

COMPETITION IN THE HARBOR

The Ed Kane water taxi service operates a fleet of 12 vessels. They do not have pontoon boats. The Safety Board interviewed the manager of Seaport Taxi's competitor. The boats operate in a similar harbor shuttle fashion between various inner harbor destinations. They do not have an agreement to run passengers to Fort McHenry.

Seaport Taxi Competitor Boat-NTSB photo

The boats are equipped with UHF radios, which are used for company communications. The Ed Kane boats do not have a VHF radio. One boat has a company cell phone. The company manager will check local media weather reports and the "Intellicast" internet weather site. The operation does not have a formal maintenance program. Employees are hired with licenses and are trained by a senior captain. The operation has an annual policy manual for both captains and mates. The manual describes the company's operation, procedures and explanation of responsibilities.

POST ACCIDENT TESTING

§ 16.230 Random testing requirements. [CGD 90-014, 56 FR 31034, July 8, 1991]

(a) Marine employers shall establish programs for the chemical testing for dangerous drugs on a random basis of crewmembers on inspected vessels who:

(1) Occupy a position, or perform the duties and functions of a position, required by the vessel's Certificate of Inspection;

(2) Perform the duties and functions of patrolmen or watchmen required by this chapter; or,

(3) Are specifically assigned the duties of warning, mustering, assembling, assisting, or controlling the movement of passengers during emergencies.

(b) Marine employers shall establish programs for the chemical testing for dangerous drugs on a random basis of crewmembers on uninspected vessels who:

(1) Are required by law or regulation to hold a license issued by the Coast Guard in order to perform their duties on the vessel;

(2) Perform duties and functions directly related to the safe operation of the vessel;

(3) Perform the duties and functions of patrolmen or watchmen required by this chapter; or,

(4) Are specifically assigned the duties of warning, mustering, assembling, assisting, or controlling the movement of passengers during emergencies.

(c) Random selection of individual crewmembers means that every member of a given population has a substantially equal chance of selection on a statistically valid basis. The testing frequency and selection process shall be such that an employee's chance of selection continues to exist throughout his or her employment. Random selection may be accomplished by periodically selecting one or more vessels and testing all crewmembers covered by this section, provided each vessel subject to the marine employer's test program remains equally subject to selection.

(d) Marine employers may form or otherwise use sponsoring organizations, or may use contractors, to conduct the random chemical testing programs required by this part.

(e) Each marine employer shall ensure that crewmembers are tested on a random basis at an annual rate of not less than 50 percent.

(f) An individual may not be engaged or employed, including self-employment, on a vessel in a position as master, operator, or person in charge for which a license or merchant mariner's document is required by law or regulation unless all crewmembers covered by this section are subject to the random testing requirements of this section.

§ 16.240 Serious marine incident testing requirements.

The marine employer shall ensure that all persons directly involved in a serious marine incident are chemically tested for evidence of dangerous drugs and alcohol in accordance with the requirements of 46 CFR 4.06.

Post-accident Events

The University of Maryland Medical Center took blood samples from the *Lady D*'s crew and passengers for analysis as a matter of routine emergency treatment. When the master was admitted to the emergency room, at 1759, he informed the medical technicians that because of the accident, he had to submit samples for toxicology screening. He subsequently provided both urine and blood samples at 1841. The medical center laboratory analysis indicates that the master's screens were negative for drugs and alcohol.

The Mate was hospitalized for ingesting water and was admitted overnight. The medical center obtained a blood sample but no urine sample for testing from the mate. His blood was not screened, however, for illegal drugs.

The Safety Board subpoenaed the specimens taken from the captain and the mate by the medical center for further testing. The medical center, pursuant to the subpoena, provided the master's blood and urine specimens and the mate's blood specimen to the Federal Aviation Administration's Civil Aerospace Medical Institute (CAMI) in Okalahoma City, Oklahoma, for testing. The CAMI report indicates no positive results for alcohol or legal and/or illegal drugs, including amphetamine, opiates, marihuana, cocaine, phencyclidine, benzodiazepines, barbiturates, antidepressants, antihistamines, meprobamate, methaqualone, and nicotine.

At the request of Seaport Taxi and the Coast Guard, the mate and the master provided samples for drug testing on March 8 and March 10, respectively, at the Concentra

Medical Center in Baltimore. The samples were sent to the American Toxicology Network laboratory in Memphis, Tennessee, for analysis. The results of the drug tests were negative. According to the master, he was last randomly drug tested by Living Classroom's contract medical service about 5 weeks before the accident.